This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.0006 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 *et seq.*

1.	Facility Name and Mailing Address:	Schwartz Sewage Treatment Plant 880 S. Pickett Street Alexandria, VA 22304	SIC Code :	4952 WWTP
	Facility Location:	696 Marlborough Point Road Stafford, VA 22554	County:	Stafford
	Facility Contact Name:	Richard Schwartz	Telephone Number:	703-823-5554
	Facility E-mail Address:	dhart@boatus.com (email for Debbie Hart – Mr. Schwartz's office manager)		
2.	Permit No.:	VA0073121	Expiration Date of previous permit:	June 1, 2013
	Other VPDES Permits associated with this facility:		None	
	Other Permits associated with this facility:		None	
	E2/E3/E4 Status:	N/A		
3.	Owner Name:	Richard Schwartz		
	Owner Contact/Title:	Owner	Telephone Number:	703-823-5554
	Owner E-mail Address:	See Facility Email Address		
4.	Application Complete Date:	9/18/12		
	Permit Drafted By:	Joan C. Crowther	Date Drafted:	1/10/13
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	1/16/13
	WPM Review By:	Bryant Thomas	Date Reviewed:	2/4/13
	Public Comment Period :	Start Date: 2/28/13	End Date:	4/1/13

5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination dated February 3, 1998– The tier ammonia effluent limitation timeframe in the past and proposed VPDES permits is based on the tier timeframe expressed in the *Policy for the Potomac River Embayments.*

Receiving Stream Name :	Potomac Creek	Stream Code:	POM
Drainage Area at Outfall:	N/A Tidal Marsh	River Mile:	0.02
Stream Basin:	Potomac River	Subbasin:	Potomac River
Section:	3	Stream Class:	II
Special Standards:	b	Waterbody ID:	VAN-A29E
7Q10 Low Flow:	Tidal Marsh	7Q10 High Flow:	Tidal Marsh
1Q10 Low Flow:	Tidal Marsh	1Q10 High Flow:	Tidal Marsh
30Q10 Low Flow:	Tidal Marsh	30Q10 High Flow:	Tidal Marsh
Harmonic Mean Flow:	Tidal Marsh	30Q5 Flow:	Tidal Marsh

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

✓	State Water Control Law	✓	EPA Guidelines
✓	Clean Water Act	✓	Water Quality Standards
✓	VPDES Permit Regulation	✓	Other (*Policy for the Potomac Embayment* (9VAC25-415 et seq.*)
✓	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class IV

8. Reliability Class: Class I

9. Permit Characterization:

✓	Private		Effluent Limited		Possible Interstate Effect
	Federal	✓	Water Quality Limited		Compliance Schedule Required
	State		Toxics Monitoring Program Required		Interim Limits in Permit
	POTW		Pretreatment Program Required		Interim Limits in Other Document
✓	TMDL				

*Historical Note - Development of the *Policy for the Potomac River Embayments* (9VAC25-415 *et seq.*):

The State Water Control Board adopted the Potomac Embayment Standards (PES) in 1971 to address serious nutrient enrichment problems evident in the Virginia embayments and Potomac River at the time. These standards applied to sewage treatment plants discharging into Potomac River embayments in Virginia and for expansions of existing plants discharging into the non-tidal tributaries of these embayments. The standards were effluent limitations for BOD, unoxidized nitrogen, total phosphorus, and total nitrogen:

Parameter	**PES (monthly average)**
BOD_5	3 mg/L
Unoxidized Nitrogen	1 mg/L (April – October)
Total Phosphorus	0.2 mg/L
Total Nitrogen	8 mg/L (when technology is available)

Questions also arose due to the fact that the PES were blanket effluent limitations that applied equally to different bodies of water. Therefore, in 1978, the State Water Control Board committed to reevaluate the PES. In 1984, a major milestone was reached when the Virginia Institute of Marine Science (VIMS) completed state-of-the-art models for each of the embayments. The Board then selected the Northern Virginia Planning District Commission (NVPDC) to conduct wasteload allocation studies of the Virginia embayments using the VIMS models. In 1988, these studies were completed and effluent limits that would protect the embayments and the main stem of the Potomac River were developed for each major facility.

In 1991 and 1992, several Northern Virginia jurisdictions with embayment treatment plants submitted a petition to the Board requesting that the Board address the results of the VIMS/NVPDC studies. Their petition requested revised effluent limitations and a defined modeling process for determining effluent limitations.

The recommendations in the petition were designed to protect the extra sensitive nature of the embayments along with the Potomac River that have become a popular recreational resource during recent years. The petition included requirements more stringent than would be applied using the results of the modeling/allocation work conducted in the 1980s. With the inherent uncertainty of modeling, the petitioners question whether the results of modeling would provide sufficient protection for the embayments. By this petition, the local governments asked for continued special protection for the embayments based upon a management approach that uses stringent effluent limits. They believed this approach had proven successful

over the past two decades. In addition, the petition included a modeling process that would be used to determine if more stringent limits would be needed in the future due to increased wastewater discharges.

The State Water Control Board adopted the petition, with revisions, as a regulation on September 12, 1996. The regulation is entitled *Policy for the Potomac River Embayments* (9 VAC25-415 *et seq.*). On the same date, the Board repealed the old PES. The new regulation became effective on April 3, 1997, and contains the following effluent limits:

Parameter	PPRE Standard (monthly average)
$cBOD_5$	5 mg/L
TSS	6 mg/L
Total Phosphorus	0.18 mg/L
Ammonia as Nitrogen	1.0 mg/L

Prior to this permit reissuance, all other reissuances of this permit have been consistent with the PES adopted in 1971. However, with this permit reissuance, the permit effluent limitations have been changed to reflect the PPRE Standards adopted in 1996. Staff has determined that these effluent limitations are appropriate for this discharge and that water quality is being maintained.

10. Wastewater Sources and Treatment Description:

The facility is a privately owned wastewater treatment plant serving one single family home with a design flow of 0.0006 MGD.

The wastewater treatment plant consists of two 1,000 gallons septic tanks (operated in series), a dosing tank with submersible pump, biological filtration via re-circulating sand filters, one 500 gallon sedimentation/filtration tank including chemical addition of aluminum salts, UV disinfection, and post aeration via stepped aeration. On June 3, 2009, the Certificate to Operate for the UV disinfection was issued.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow(s)	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.0006 MGD	38° 21' 15" N 77° 17' 18" W

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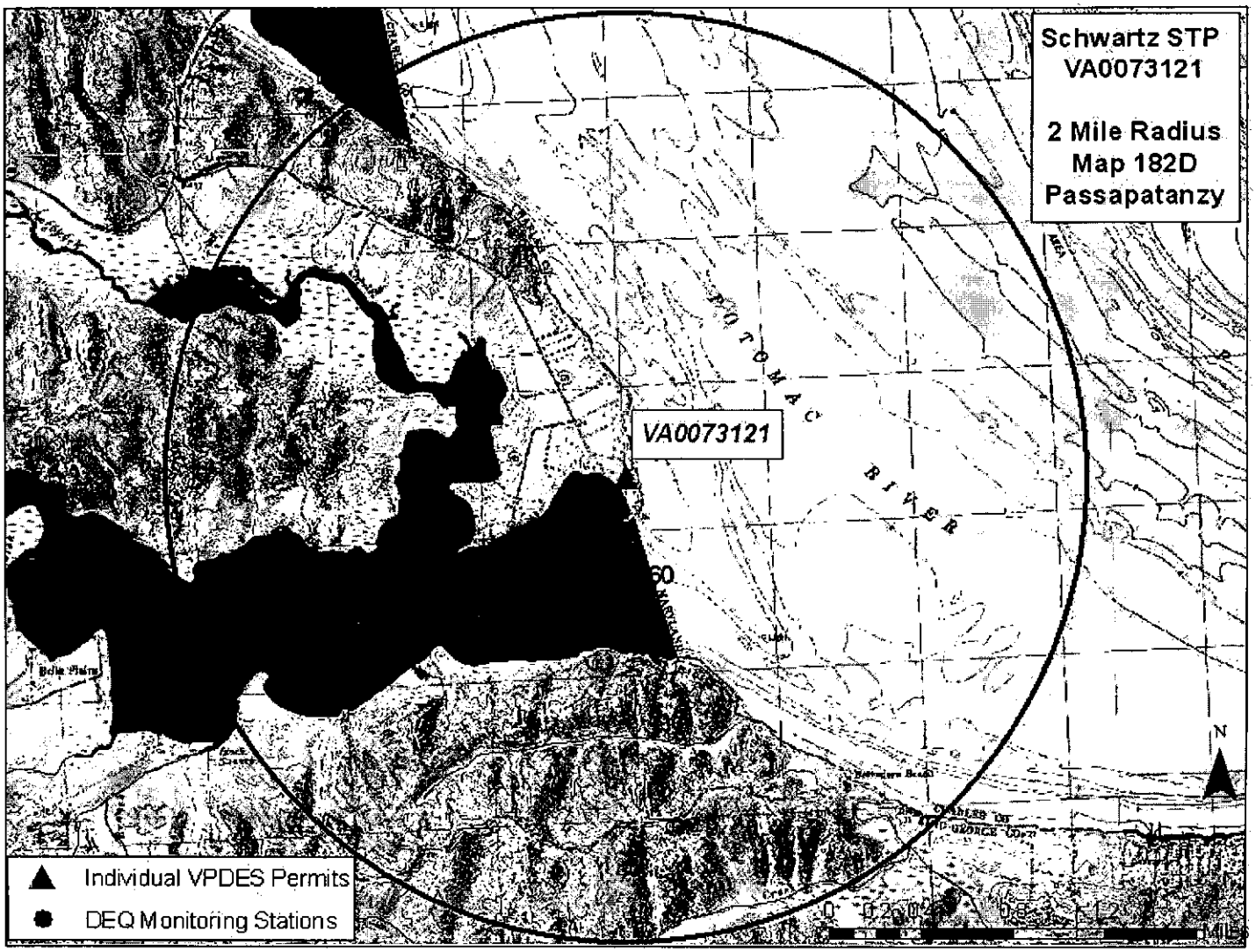
USGS Topographic Map: Passapatanzy (182D)



11. Sludge Treatment and Disposal Methods:

When needed, the sludge from the septic tanks and sedimentation tank is pumped out and transported to Aquia AWT (VA0060968) for disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

There are no discharges or intakes within a 2 mile radius of the facility's discharge point. There is a DEQ ambient water quality monitoring station 1aPOM000.60, located near red buoy #4, approximately 0.75 miles upstream of Outfall 001.

13. Material Storage:

TABLE 2 - Material Storage

Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Alum salts	15 gallons	Stored in a covered container in the control building

14. Site Inspection:

Performed by Beth Biller and Joan Crowther on August 28, 2007. (See Attachment 3).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

This facility discharges into the tidal portion of Potomac Creek close to the Potomac River. There is no DEQ water quality monitoring station in this segment. The following is the water quality summary for this tidal portion of Potomac Creek, as taken from the Draft 2012 Integrated Assessment[(1)]:

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. A PCB TMDL for the tidal Potomac River watershed has been completed and approved.

The aquatic life use is fully supporting. A TMDL has been completed for the Chesapeake Bay watershed.[(2)] The submerged aquatic vegetation data is assessed as fully supporting the aquatic life use. For the open water aquatic life subuse; the thirty day mean is acceptable, however, the seven day mean and instantaneous levels have not been assessed.

The recreation and wildlife uses were not assessed.

The nearest DEQ ambient monitoring station is 1aPOM000.60, located near red buoy #4, approximately 0.75 miles upstream of Outfall 001. The following is the water quality summary for this tidal portion of Potomac Creek, as taken from the Draft 2012 Integrated Assessment[(1)]:

DEQ ambient water quality monitoring, station 1aPOM000.60 (Class II, Section 3, special standards b).

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. A PCB TMDL for the tidal Potomac River watershed has been completed and approved.

The aquatic life use is fully supporting. A TMDL has been completed for the Chesapeake Bay watershed.[(2)] The submerged aquatic vegetation data is assessed as fully supporting the aquatic life use. For the open water aquatic life subuse; the thirty day mean is acceptable, however, the seven day mean and instantaneous levels have not been assessed.

The recreation and wildlife uses are fully supporting.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

Impairment Information in the Draft 2012 Integrated Report[(1)]

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Potomac Creek	Fish Consumption	PCBs	Tidal Potomac PCB 10/31/2007	None	N/A	---

[(1)] Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.

[(2)] Tidal Potomac Creek is the receiving stream for the discharge from this facility, and is listed as fully supporting the aquatic life use. There is a downstream TMDL that has been completed by EPA to address poor water quality in the Chesapeake Bay. This TMDL covers the entire Bay watershed, including the upstream tidal tributaries such as Potomac Creek.

The planning statement dated January 9, 2013 is found in Attachment 4.

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Potomac Creek is located within Section b of the Potomac River Basin, Potomac River Subbasin, and classified as a Class II water.

Class II tidal waters in the Chesapeake Bay and it tidal tributaries must meet dissolved oxygen concentrations as specified in 9VAC25-260-185 and maintain a pH of 6.0-9.0 standard units as specified in 9VAC25-260-50. In the Northern Virginia area, Class II waters must meet the Migratory Fish Spawning and Nursery Designated Use from February 1 through May 31. For the remainder of the year, these tidal waters must meet the Open Water use. The applicable dissolved oxygen concentrations are presented below.

Dissolved Oxygen Criteria (9VAC25-260-185)

Designated Use	Criteria Concentration/Duration	Temporal Application
Migratory fish spawning and nursery	7-day mean > 6 mg/L (tidal habitats with 0-0.5 ppt salinity)	February 1 – May 31
	Instantaneous minimum > 5 mg/L	
Open-water[1]	30-day mean > 5.5 mg/L (tidal habitats with 0-0.5 ppt salinity) 30-day mean > 5 mg/L (tidal habitats with >0.5 ppt salinity)	Year-round
	7-day mean > 4 mg/L	
	Instantaneous minimum > 3.2 mg/L at temperatures < 29°C Instantaneous minimum > 4.3 mg/L at temperatures > 29°C	

[1]In applying this open-water instantaneous criterion to the Chesapeake Bay and its tidal tributaries where the existing water quality for dissolved oxygen exceeds an instantaneous minimum of 3.2 mg/L, that higher water quality for dissolved oxygen shall be provided antidegradation protection in accordance with section 30 subsection A.2 of the Water Quality Standards.

The 2013 Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 5) details other water quality criteria applicable to the receiving stream. The receiving stream is considered a tidal marsh and no mixing zone is allowed when determining the water quality criteria applicable to the receiving stream. Therefore, no stream flow was used in the analysis. In these spreadsheets, stream and effluent pH, temperature, and hardness values are the same and represent what is expected to be or is the actual effluent values. The analysis was divided into two seasons; namely, April – October and November – March. This was done because the PES's TKN effluent limitation was established as seasonal (April – October).

1) Basis for Effluent pH and Temperature:
Only one effluent sample was collected during the timeframe of November – March and this pH value (6.6 SU) was used as the pH 90th percentile value. Again, only one effluent sample was collected during the timeframe of April – October and this pH value (6.9 SU) was used as the pH 90th percentile value. Because no effluent temperature values were available, DEQ's default effluent temperature value of 25°C (April – October) and (November – March) default of 15°C were used.

2) Basis for Effluent Hardness:
Since there is no stream flow (no mixing zone), staff guidance suggests using a default hardness value of 50 mg/L $CaCO_3$.

Ammonia as N and TKN:
The ammonia effluent limitation for April 1st through October 31st is set by the *Policy for the Potomac River Embayments* (9 VAC 25-415-40). During this period, the ammonia effluent limit is 1.0 mg/L.

During the 1998 VPDES permit process, the existing ammonia effluent limitations for November through March were determined and have been carried forward since then. DEQ's effluent pH (7.5 SU for both summer and winter) and effluent temperature (25°C for the summer and 15°C for the winter) default values were used to determine the ammonia as N criteria. The ammonia as N criteria were determined as follows:

	Acute	Chronic
April – October	11.93 mg/L	2.05 mg/L
November – March	12.31 mg/L	2.12 mg/L

The resulting Ammonia as N effluent limitations for April – October was 4.2 mg/L and for November – March was 4.3 mg/L. (See Attachment 6 for the 1998 ammonia calculations).

The staff re-evaluated pH and temperature of the facility to determine if the ammonia effluent limitations for the period of November 1st through March 31st were still appropriate. This evaluation shown that the ammonia limitation could be relaxed to 12.8 mg/L; however, because the facility has demonstrated that the current 4.3 mg/L ammonia effluent limitation can be complied with, this existing ammonia effluent limitation will remain in the permit. (See Attachment 7 for 2013 ammonia calculation.)

Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). There is no hardness data for this facility. See Item 15c(3) for the basis for the receiving stream and effluent Total Hardness values.

Bacteria Criteria: The Virginia Water Quality Standards (9VAC25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

> *Enterococci* bacteria per 100 ml of water shall not exceed a monthly geometric mean of 35 n/100 mls for a minimum of four weekly samples taken during any calendar month.

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Potomac Creek, is located within Section 3 of the Potomac River Basin. This section has been designated with a special standard of b.

Special Standard "b" (*Policy for the Potomac River Embayments*) established effluent standards for all sewage plants discharging into Potomac River embayments and for expansions of existing plants discharging into non-tidal tributaries of these embayments. 9VAC25-415, *Policy for the Potomac Embayments* controls point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 Bridge in King George County. The regulation sets effluent limits for $cBOD_5$, total suspended solids, phosphorus, and ammonia, to protect the water quality of these high profile waterbodies.

e) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on January 7, 2013, for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified. (See Attachment 8).

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1. The Tier 1 designation was established due to the tidal marsh's flow variability and past dissolved oxygen water quality violations. It is staff's best professional judgment that such streams are Tier 1. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:
Effluent data obtained from the Discharge Monitoring Reports from the period of October 2006 through September 2012 has been reviewed and determined to be suitable for evaluation. The facility only discharged two quarters during this period. No effluent violations were reported during these two quarters.

The following pollutants require a wasteload allocation analysis: Ammonia as N.

b) Determining Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f) (Q_s)] - [(C_s) (f) (Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow
  (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

For Tidal Marsh Area:

In accordance with the Water Quality Standards (9VAC25-260-20.B4), "Mixing Zones shall not be allowed by the board for effluent discharged to wetlands, swamps, marshes, lakes, or ponds." Since this effluent discharges into a tidal marsh, the water segment receiving the discharge via Outfall 001 is considered to have no mixing zone. As such, the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

The ammonia effluent limitation for April 1st through October 31st is set by the *Policy for the Potomac River Embayments* (9 VAC 25-415-40). During this period, the ammonia effluent limit is 1.0 mg/L.

The staff re-evaluated pH and temperature of the facility to determine if the ammonia effluent limitations for the period of November 1st through March 31st were still appropriate. This evaluation shown that the ammonia limitation could be relaxed to 12.8 mg/L; however, because the facility has demonstrated that the current 4.3 mg/L ammonia effluent limitation can be complied with, this existing ammonia effluent limitation will remain in the permit. (See Attachments 6 and 7 for 1998 and 2013 ammonia calculations, respectively.)

2) Metals/Organics:

No metals or organics data were available for review; therefore, no effluent limits are proposed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), Total Phosphorus (TP), and pH limitations are proposed.

Changes to $cBOD_5$ and TSS are proposed to reflect the *Policy for the Potomac River Embayments* effluent limitations. The TKN effluent limitations was replaced with an Ammonia as N effluent limitation which is consistent with the *Policy for the Potomac River Embayments.*

$cBOD_5$, TSS, Ammonia (April – October) and TP limitations are based on the *Policy for the Potomac River Embayments* (9 VAC 25-415 *et.seq.*).

D.O. and Ammonia as N (November – March) limitations are based on Water Quality Standards.

pH limitations are set at the water quality criteria.

Enterococci bacteria limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, $cBOD_5$, Total Suspended Solids, Ammonia, *Enterococci*, pH, Dissolved Oxygen, and Total Phosphorus.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration

values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type established in the permit are in accordance with the VPDES Permit Manual recommendations; however, the frequency of analysis were increase from the VPDES Permit Manual's recommendations due to human health concerns from once per year to quarterly during the 2003 permit reissuance. For this permit reissuance, the sample type and frequency of analysis will continue as the previously issued permit.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for cBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

During this permit reissuance, the effluent limitations for BOD_5, TSS and TKN were changed to be consistent with the *Policy of the Potomac River Policy*. The TKN effluent limitation was replaced with an ammonia effluent limit. The BOD_5 (3 mg/L) effluent limitation was changed to a $cBOD_5$ (5 mg/L) effluent limiations. The TSS (3.0 mg/L) effluent limitation was changed to a TSS (6.0 mg/L) effluent limitation. These effluent limitations have been established as the level of treatment necessary to maintain and protect the water quality of the tidal Potomac River embayments. Antibacksliding of these limitations is in accordance with the Clean Water Act, Section 402(o)(2)(B)(ii) which states antibacksliding can occur when it is determined that technical mistakes, or mistaken interpretations of the law were made in the issuing the permit under subsection (a)(1)(B) of this section. These permit's effluent limitations should have been changed when the revised PPRE became effective in 1997.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.0006 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/3M	EST
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/3M	Grab
$cBOD_5$	5	5 mg/L 0.011 kg/d	8 mg/L 0.018 kg/d	NA	NA	1/3M	Grab
Total Suspended Solids (TSS)	5	6.0 mg/L 0.014 kg/d	9.0 mg/L 0.020 kg/d	NA	NA	1/3M	Grab
DO	3	NA	NA	6.0 mg/L	NA	1/3M	Grab
Ammonia (April 1st –October 31st)	5	1.0 mg/L 0.002 kg/d	1.5 mg/L 0.003 kg/d	NA	NA	1/3M	Grab
Ammonia, as N (November 1st – March 31st)	3	4.3 mg/L	4.3 mg/L	NA	NA	1/3M	Grab
Enterococci (Geometric Mean)[a] [b]	3	35 n/100mls	NA	NA	NA	1/3M[b]	Grab
Total Phosphorus	5	0.18 mg/L 0.0004 kg/d	0.27 mg/L 0.0006 kg/d	NA	NA	1/3M	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. *Policy for the Potomac Embayments* (9 VAC 25-415 *et seq.*)

MGD = Million gallons per day.
N/A = Not applicable.
NL = No limit; monitor and report.
S. U. = Standard units.
EST = Estimated.
1/3M = Once every three months.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

[a] Samples shall be collected between the hours of 10 A.M. and 4 P.M.

[b] The permittee shall sample and submit *Enterococci* results at the frequency of once every week during one month each quarter. A total of 4 weekly samples shall be used to calculate the geometric mean.

The quarterly monitoring periods shall be January through March, April through June, July through September, and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.

b) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

c) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

d) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class IV operator.

e) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I. The facility is required to meet a reliability Class of I based on the effluent location and human health concerns.

f) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

g) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

h) TMDL Reopener: This special condition is to allow the permit to reopen if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:
1) Special Conditions for sludge use and disposal were added to the permit. Also, the sludge reopener special condition was added.

b) Monitoring and Effluent Limitations:
1) Effluent limitation and monitoring frequency for *Enterococci* was changed in this draft permit. The VA Water Quality Standards now require that *Enterococci* monitoring be conducted weekly with a minimum of 4 samples to be used to determine a monthly geometric mean. Because of the quarterly monitoring requirement for the other parameter and the design flow of 0.0006 MGD, it is staff's best professional opinion that the *Enterococci* monitoring to be conducted once per week during one month each quarter. The effluent limitation was reduced from a maximum monthly value of 104 n/100mls to a monthly geometric mean of 35 n/100mls in accordance with the VA Water Quality Standards.
2) Total Residual Chlorine effluent limitations and monitoring were removed from the permit because UV disinfection was installed.
3) Effluent limitations for BOD_5, TSS, and TKN that were based on the 1971 Potomac Embayment Standards and were previously required by the VPDES Permit have been changed in accordance with the 1997 revision to the Policy of the Potomac River Embayments (9VAC25-415 *et.seq.*)

23. Variances/Alternate Limits or Conditions:

There are no variances/alternate limits or conditions contained in this permit.

24. Public Notice Information:

First Public Notice Date: 2/28/13 Second Public Notice Date: 3/7/13

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 9 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

25. Additional Comments:

Previous Board Action(s): There has been no previous Board action associated with this VPDES Permit.

Staff Comments: None.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 10.

VA0073121 Schwartz Residence Sewage Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Determination Memo dated February 3, 1998
2	Facility Schematic/Diagram
3	Site Inspection by DEQ Staff on August 28, 2007
4	DEQ Planning Statement dated January 9, 2013
5	2013 Freshwater Water Quality Criteria/Wasteload Allocated Analysis dated January 17, 2013
6	1998 Ammonia Analysis
7	2013 Ammonia Analysis
8	DGIF Threatened and Endangered Species Database Search dated November 19, 2012
9	Public Notice
10	EPA Checklist dated January 9, 2013

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Richard Schwartz Residence - #VA0073121

TO: M. Sue Heddings, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: February 3, 1998

COPIES: Ron Gregory, Charles Martin, File

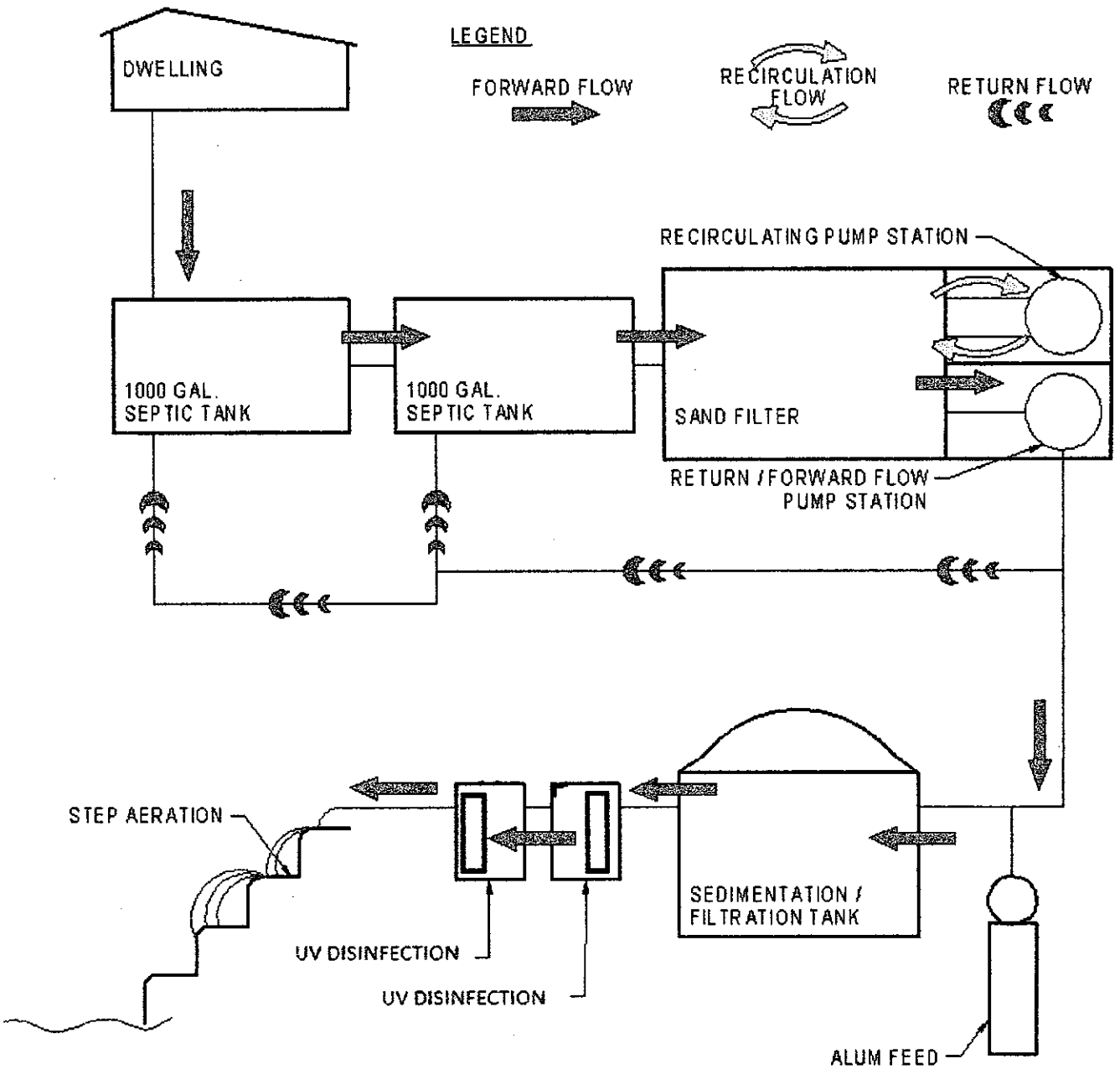
The Richard Schwartz Residence discharges to an unnamed tributary of the Potomac Creek near Belvedere Beach, VA. Flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Passapatanzy Quadrangle topographical map which shows the receiving stream is tidal at the discharge point. The flow frequencies for tidal waterbodies are not determinable. Dilution ratios should be used to determine the appropriate effluent limitations for a discharge to tidal waters.

If you have any questions concerning this analysis, please let me know.

Attachment 1

FLOW SCHEMATIC	PMBA ENVIRONMENTAL SERVICES ENGINEERING - PLANNING - ANALYZING - PERMITTING		
RICHARD SCHWARTZ RESIDENCE STAFFORD COUNTY, VIRGINIA	DESIGNED BY PMB	DATE 5 SEPT 2012	DRAWN BY TLK/PMB



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN VIRGINIA REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3801
www.deq.virginia.gov

Preston Bryant
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

September 13, 2007

Mr. Richard Schwartz
880 South Pickett Street
Alexandria, VA 22304

Re: Schwartz Residence STP – VA0073121

Dear Mr. Schwartz:

Attached are copies of the laboratory and technical inspection reports generated from observations made while performing a Facility Technical Inspection at the Schwartz Residence - Sewage Treatment Plant (STP) on August 28, 2007. The water compliance staff would like to thank Mr. Doug Crooks for his time and assistance during the inspection.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Virginia Regional Office at (703) 583–3896 or by email at eabiller@deq.virginia.gov.

Sincerely,

Beth Biller

Beth Biller
Environmental Specialist II

cc: Compliance Manager
Compliance Auditor
Permits/DMR file
Compliance Inspector
Doug Crooks – Dabney and Crooks, Inc. (via e-mail)

WASTEWATER FACILITY INSPECTION REPORT

PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0073121	**June 2, 2003**		**June 1, 2008**

Facility Name	Address	Telephone Number
Schwartz Residence STP	**696 Marlborough Point Road Stafford, VA 22554**	
Owner Name	Address	Telephone Number
Richard Schwartz	**880 South Pickett Street Alexandria, VA 22304**	
Responsible Official	Title	Telephone Number
Richard Schwartz	**Owner**	
Responsible Operator	Operator Cert. Class/number	Telephone Number
Doug Crooks	**Class I / 1909 000367**	**540-373-0380**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**0.0006 MGD**
Population Served	**1 home**
Connections Served	**1 home**

EFFLUENT LIMITS: (mg/L unless specified)

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
CBOD5		**5.0**	**7.5**	**Total Phosphorus**		**0.18**	**0.27**
pH (s.u.)	**6.0**		**9.0**	**Ammonia**		**1.0**	**1.5**
TSS		**3.0**	**9.0**	**TRC (CCT)**	**1.0**		
E. Coli (#/CML)		**235**		**TRC (effluent)**		**0.016**	**0.016**
DO	**5.0**						

Receiving Stream	**Accokeek Creek, UT**
Basin	**Potomac River**
Discharge Point (LAT)	**38° 26" 48'**
Discharge Point (LONG)	**77° 28" 02'**

Technical Inspection Summary

Comments/Recommendations for action from current inspection on August 28, 2007:

Facility is neat and well maintained.

Chlorination and dechlorination units should be checked prior to discharge to prevent the reoccurrence of excessive chlorination and incomplete dechlorination.

VPDES NO. **VA0073121**

REV 5/00

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date:	**8/28/07**	Date form completed:	**9/11/07**
Inspection by:	**Beth Biller**	Inspection agency:	**DEQ-NRO**
Time spent:	**8 hours**	Announced:	**Yes**
Reviewed by:	**Ed Stuart**	Scheduled:	**Yes**

Present at inspection: **Joan Crowther – DEQ; Doug Crooks – Dabney & Crooks, Inc.**

TYPE OF FACILITY:

Domestic
[ ] Federal
[**X**] Nonfederal
[ ] Major
[**X**] Minor

Industrial
[ ] Major
[ ] Minor
[ ] Primary
[ ] Secondary

Type of inspection:
[**X**] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **None**
Agency: **DEQ-NRO**

Population served: **1 home**

Connections served: **1 home**

Last quarter average: (Effluent) Month/year: **April – June 2007**

No Discharge

Quarter average: (Effluent) **January – March 2007**

Total Phosphorus	**0.014**	**mg/L**	**pH**	**7.3 s.u.**
DO	**10.2**	**mg/L**	**TSS**	**1.5 mg/L**
E. Coli	**<2**	**N/MCL**	**$CBOD_5$**	**3 mg/L**
Ammonia	**2.3**	**mg/L**	**TRC (CCT)**	**1.6 mg/L**
TRC(effluent)	**<QL**			

DATA VERIFIED IN PREFACE	[**X**] Updated	[ ] No changes	
Has there been any new construction?	[ ] Yes	[**X**] No	
If yes, were plans and specifications approved?	[ ] Yes	[ ] No	[**X**] NA

DEQ approval date:

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators:	I – **1**		
2. Hours per day plant is manned:	**see comment**		
3. Describe adequacy of staffing.	[ ] Good	[**X**] Average	[ ] Poor
4. Does the plant have an established program for training personnel?		[**X**] Yes	[ ] No
5. Describe the adequacy of the training program.	[**X**] Good	[ ] Average	[ ] Poor
6. Are preventive maintenance tasks scheduled?	[**X**] Yes	[ ] No	
7. Describe the adequacy of maintenance.	[ ] Good	[**X**] Average	[ ] Poor*
8. Does the plant experience any organic/hydraulic overloading? If yes, identify cause and impact on plant:	[ ] Yes	[**X**] No	
9. Any bypassing since last inspection?	[ ] Yes	[**X**] No	
10. Is the standby electric generator operational?	[ ] Yes	[ ] No*	[**X**] NA
11. Is the STP alarm system operational?	[ ] Yes	[ ] No*	[**X**] NA
12. How often is the standby generator exercised? Power Transfer Switch? Alarm System?	**NA**		
13. When was the cross connection control device last tested on the potable water service?	**NA**		
14. Is sludge being disposed in accordance with the approved sludge disposal plan?	[**X**] Yes	[ ] No	[ ] NA
15. Is septage received by the facility?	[ ] Yes	[**X**] No	
Is septage loading controlled?	[ ] Yes	[**X**] No	
Are records maintained?	[ ] Yes	[**X**] No	
16. Overall appearance of facility:	[**X**] Good	[ ] Average	[ ] Poor

Comments:

2) A grounds keeper resides at the house year round and provides daily observation and maintenance of the STP.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[ ] Yes	[ ] No	[X] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[X] NA

2. What does the operational log contain?

[X] Visual observations	[X] Flow measurement
[ ] Laboratory results	[X] Process adjustments
[ ] Control calculations	[ ] Other (specify)

3. What do the mechanical equipment records contain?

[X] As built plans and specs	[X] Spare parts inventory
[X] Manufacturers instructions	[X] Equipment/parts suppliers
[X] Lubrication schedules	[ ] Other (specify)

4. What do the industrial waste contribution records contain (Municipal Only)?

[ ] Waste characteristics	[ ] Locations and discharge types
[ ] Impact on plant	[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records	[X] Operational Log
[ ] Industrial contributor records	[ ] Instrumentation records
[ ] Sampling and testing records	

6. Records not normally available to plant personnel and their location: **See comment**

7. Were the records reviewed during the inspection? [ ] Yes [X] No

8. Are the records adequate and the O & M Manual current? [X] Yes [ ] No

9. Are the records maintained for the required 3-year time period? [X] Yes [ ] No

Comments:
6) Copies of all records are retained at the Dabney and Crooks offices.

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [**X**] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [ ] Yes [ ] No* [**X**] NA
5. Are composite samples refrigerated during collection? [ ] Yes [ ] No* [**X**] NA
6. Does plant maintain required records of sampling? [**X**] Yes [ ] No*
7. Does plant run operational control tests? [**X**] Yes [ ] No

(D) TESTING

1. Who performs the testing? [ ] Plant [ ] Central Lab [**X**] Commercial Lab
   Dabney & Crooks Inc.

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **HACH Pocket II Colorimeter**
3. Does plant appear to have sufficient equipment to perform required tests? [**X**] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [**X**] Yes [ ] No*

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [**X**] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [**X**] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [**X**] NA

UNIT PROCESS: Septic Tank/Dosing Siphon/Sand Filter

1.	Grease trap preceding septic tank:	[ ] Yes	[ ] No	[X] NA	
2.	When was septic tank last pumped?	**NA**			
3.	Dosing siphon operational (doesn't trickle):	[ ] Yes	[ ] No	[X] NA	
4.	Condition of dosing siphon:	[ ] Good	[ ] Fair	[ ] Poor*	
5.	Number of sand filters:	**1**			
6.	Condition of distribution system including seals:		[X] Good	[ ] Fair	[ ] Poor*
7.	Following problems evident:				
	a. grass on filter	[ ] Yes*	[X] No		
	b. ponding	[ ] Yes*	[X] No		
	c. uneven sand	[ ] Yes*	[X] No		
	d. places of black or septic sand	[ ] Yes*	[X] No		
	e. uneven distribution of influent	[ ] Yes*	[X] No		
	f. solids on surface	[ ] Yes*	[X] No		
8.	Wasted sand disposed of properly?	[X] Yes	[ ] No*		

UNIT PROCESS: Chlorination

1	No. of chlorinators:	**0**	In operation:	**0**
2.	No. of evaporators:	**0**	In operation:	**0**
3.	No. of chlorine contact tanks:	**1**	In operation:	**1**

4.	Proper flow distribution between units:	[ ] Yes	[ ] No*	[X] NA
5.	How is chlorine introduced into the wastewater? [ ] Perforated diffusers [ ] Injector with single entry point [X] Other: **tablet feeder**			
6.	Chlorine residual in basin effluent:	**not measured**		
7.	Applied chlorine dosage:	**varies**		
8.	Contact basins adequately baffled:	[X] Yes	[ ] No*	
9.	Adequate ventilation:			
	a. cylinder storage area	[ ] Yes	[ ] No*	[X] NA
	b. equipment room	[ ] Yes	[ ] No*	[X] NA
10.	Proper safety precautions used:	[X] Yes	[ ] No*	
11.	General condition:	[X] Good	[ ] Fair	[ ] Poor

UNIT PROCESS: Dechlorination

1.	Chemical used:	[ ] Sulfur Dioxide		[X] Bisulfite	[ ] Other
2.	No. of sulfonators:	**0**	In operation:	**0**	
3.	No. of evaporators:	**0**	In operation:	**0**	
4.	No. of chemical feeders:	**1**	In operation:	**1**	
5.	No. of contact tanks:	**1**	In operation:	**1**	
6.	Proper flow distribution between units:		[ ] Yes	[ ] No*	[X] NA
7.	How is chemical introduced into the wastewater? [ ] Perforated diffusers [ ] Injector with single entry point [X] Other: **tablet feeder**				
8.	Control system operational:		[ ] Yes	[ ] No*	[X] NA
	a. residual analyzers:		[ ] Yes	[ ] No*	
	b. system adjusted:		[ ] Automatic	[ ] Manual	[ ] Other:
9.	Applied dechlorination dose:		**varies**		
10.	Chlorine residual in basin effluent:		**see comment**		
11.	Contact basins adequately baffled:		[ ] Yes	[ ] No*	[ ] NA
12.	Adequate ventilation:				
a.	cylinder storage area:		[ ] Yes	[ ] No*	
b.	equipment room:		[ ] Yes	[ ] No*	
13.	Proper safety precautions used:		[ ] Yes	[ ] No*	
14.	General condition:		[ ] Good	[ ] Fair	[ ] Poor

Comments:

10) 2 different TRC analysis were attempted; each time the powder pillow was added a rust colored precipitate formed and the sample turned bright pink. Examination of the collected samples revealed particulate matter floating in the samples. Onsite discussion with the operator and engineer led to the conclusion that the hot humid temperatures caused the chlorine tablets to swell and the quick flush of water when the discharge occurred caused the tablets to break apart. The dechlorination tablets hardened with the hot humid temperatures and did not have time to dissolve to properly dechlorinate the effluent. All tablets were replaced and the chlorination feeder was adjusted so only one feeder tube contained tablets. Discharge ceased prior to adjustment so no further samples could be collected.

UNIT PROCESS: Post Aeration

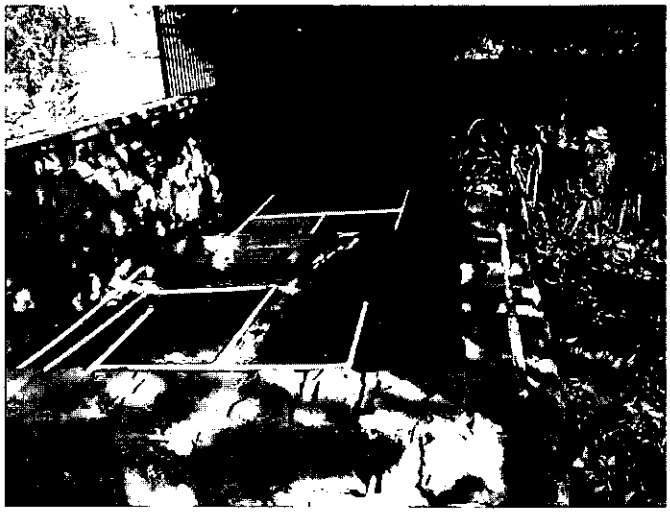
1. Number of units: **1** In operation: **1**
2. Proper flow distribution between units: [ ] Yes [ ] No* [**X**] NA
3. Evidence of following problems:
   a. dead spots [ ] Yes* [ ] No
   b. excessive foam [ ] Yes* [ ] No
   c. poor aeration [ ] Yes* [ ] No
   d. mechanical equipment failure [ ] Yes* [ ] No [**X**] NA
4. How is the aerator controlled? [ ] Time clock [ ] Manual [ ] Continuous [**X**] Other* [ ] NA
5. What is the current operating schedule? **Continuous during discahrge**
6. Step weirs level: [**X**] Yes [ ] No [ ] NA
7. Effluent D.O. level: **not measured**
8. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

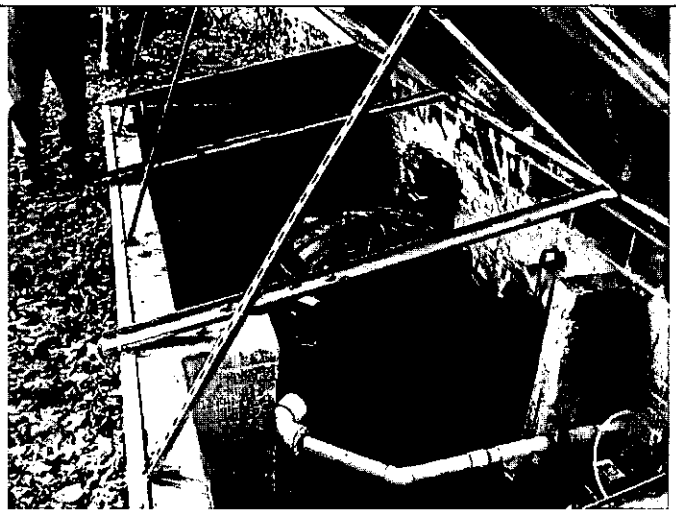
UNIT PROCESS: Effluent/Plant Outfall

1. Type Outfall [**X**] Shore based [ ] Submerged
2. Type if shore based: [ ] Wingwall [ ] Headwall [ ] Rip Rap [**X**] Other**
3. Flapper valve: [ ] Yes [**X**] No [ ] NA
4. Erosion of bank: [ ] Yes [**X**] No [ ] NA
5. Effluent plume visible? [ ] Yes* [**X**] No
6. Condition of outfall and supporting structures: [**X**] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:
   a. oil sheen [ ] Yes* [**X**] No
   b. grease [ ] Yes* [**X**] No
   c. sludge bar [ ] Yes* [**X**] No
   d. turbid effluent [ ] Yes* [**X**] No
   e. visible foam [ ] Yes* [**X**] No
   f. unusual color [ ] Yes* [**X**] No

Comments:
2) Effluent flow proceeds down the step cascade unit and into a wetland before reaching the river.
7) A strong chlorine odor was noted in the collected samples.



1) Sandfilter



2) Overview of plant

3) Chemical addition and flow meter

4) Outfall - Step aeration to Marshy area (photo taken April 2003)

Schwartz STP Technical Inspection Photos & Layout by: Beth Biller	VA0073121 August 28, 2007 Page 1 of 1

To:	Joan C. Crowther
From:	Jennifer Carlson
Date:	January 9, 2013
Subject:	Planning Statement for Schwartz STP
Permit Number:	VA0073121

Information for Outfall 001:

Discharge Type: Municipal
Discharge Flow: 0.0006 MGD
Receiving Stream: Potomac Creek
Latitude / Longitude: 38°21'15"/77°17'18"
Rivermile: 0.02
Streamcode: 1aPOM
Waterbody: VAN-A29E
Water Quality Standards: Section 3; Class II; Special Standards b
Drainage Area: N/A Tidal

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

This facility discharges into the tidal portion of Potomac Creek close to the Potomac River. There is no DEQ water quality monitoring station in this segment. The following is the water quality summary for this tidal portion of Potomac Creek, as taken from the Draft 2012 Integrated Assessment*:

Class II, Section 3, special stds. b.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. A PCB TMDL for the tidal Potomac River watershed has been completed and approved.

The aquatic life use is fully supporting. A TMDL has been completed for the Chesapeake Bay watershed^. The submerged aquatic vegetation data is assessed as fully supporting the aquatic life use. For the open water aquatic life subuse; the thirty day mean is acceptable, however, the seven day mean and instantaneous levels have not been assessed.

The recreation and wildlife uses were not assessed.

The nearest DEQ ambient monitoring station is 1aPOM000.60, located near red buoy #4, approximately 0.75 miles upstream of Outfall 001. The following is the water quality summary for this tidal portion of Potomac Creek, as taken from the Draft 2012 Integrated Assessment*:

Class II, Section 3, special stds. b.

DEQ ambient water quality monitoring, station 1aPOM000.60.

The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. A PCB TMDL for the tidal Potomac River watershed has been completed and approved.

The aquatic life use is fully supporting. A TMDL has been completed for the Chesapeake Bay watershed^. The submerged aquatic vegetation data is assessed as fully supporting the aquatic life use. For the open water aquatic life subuse; the thirty day mean is acceptable, however, the seven day mean and instantaneous levels have not been assessed.

The recreation and wildlife uses are fully supporting.

^Tidal Potomac Creek is the receiving stream for the discharge from this facility, and is listed as fully supporting the aquatic life use. There is a downstream TMDL that has been completed by EPA to address poor water quality in the Chesapeake Bay. This TMDL covers the entire Bay watershed, including the upstream tidal tributaries such as Potomac Creek.

** Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   Yes.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2012 Integrated Report*						
Potomac Creek	Fish Consumption	PCBs	Tidal Potomac PCB 10/31/2007	None	N/A	---

** Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

   No.

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

   There is a PCB impairment in the tidal portion of Potomac Creek. A PCB TMDL has been completed for the Potomac River and was approved by EPA on 10/31/2007. DEQ Staff has concluded that low-level PCB monitoring is not warranted for this facility, as it is a small wastewater treatment facility and is unlikely to discharge any PCBs.

   There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

   There are no public water supply intakes within a 5 mile radius of this facility.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Schwartz Residence WWTP (April - October) Permit No.: VA0073121

Receiving Stream: Potomac Creek (Marsh) Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	50 mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	25 deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	6.9 SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	6.9 SU
10% Maximum pH =	SU	30Q10 (Wet season)	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.0006 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	3.92E+01	3.11E+00	na	--	3.92E+01	3.11E+00	na	--	--	--	--	--	--	--	--	--	3.92E+01	3.11E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	3.92E+01	6.12E+00	na	--	3.92E+01	6.12E+00	na	--	--	--	--	--	--	--	--	--	3.92E+01	6.12E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene[C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD[C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE[C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT[C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene[C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane[C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane[C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene[C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin[C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene[C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**4.2E+03**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**2.6E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Schwartz Residence WWTP (November - March) Permit No.: VA0073121

Receiving Stream: Potomac Creek (Marsh) Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	50 mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	50 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	deg C
90% Temperature (Wet season) =	15 deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	6.6 SU	1Q10 (Wet season) =	0 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	6.6 SU
10% Maximum pH =	SU	30Q10 (Wet season)	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0 MGD			Discharge Flow =	0.0006 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	4.68E+01	6.57E+00	na	--	4.68E+01	6.57E+00	na	--	--	--	--	--	--	--	--	--	4.68E+01	6.57E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	4.68E+01	6.36E+00	na	--	4.68E+01	6.36E+00	na	--	--	--	--	--	--	--	--	--	4.68E+01	6.36E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide [C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene [C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene [C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC [C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC [C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC [C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane [C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone [C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine [C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine [C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine [C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total [C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				**Most Limiting Allocations**			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	**Acute**	**Chronic**	**HH (PWS)**	**HH**
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**4.2E+03**
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	**1.0E+00**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.0E+01**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.3E+01**
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**4.7E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**6.0E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.8E-03**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.0E+01**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.6E+02**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.4E+01**
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	**6.5E+01**	**6.6E+01**	**na**	**2.6E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

April - Oct - summer tier 1998 Ammonia

FACILITY:
VPDES #:

Ammonia Calculation - Acute Ammonia Criteria for Freshwater

	Temperature	pH	TIER INFORMATION:
DATA ENTRY:->	25	7.50	

FT
FT=10^((.03)(20-T) = 0.7079458

FPH
FPH=1 if 8.0<=pH<=9.0 = NA
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = 1.4354626
FPH= 1.4354626

Acute Criteria Concentration=.52/FT/FPH/2 = 0.2558477

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Acute Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0176772
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C,) pKa = 9.2448413
Total Acute Ammonia Criteria = Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Acute Ammonia Criteria = 0.2558477 / 0.01767717791 = Total Ammonia = 14.4733324 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL ACUTE N-NH3 14.4733324 X .824 11.9260259 MG/L = 11.93

Ammonia Calculation - Chronic Ammonia Criteria for Freshwater

	Temperature	pH	TIER INFORMATION:
DATA ENTRY:->	25	7.50	

FT
FT=10^((.03)(20-T) = 0.7079458

FPH
FPH=1 if 8.0<=pH<=9.0 = NA
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = 1.4354626
FPH= 1.4354626

Ratio
Ratio = 13.5 if 7.7<=pH<=9.0 = NA
Ratio = 20.25 x (10^(7.7-pH))/(1+(10^(7.4-pH)) if 6.5<=pH<7.7 = 17.8864081
Ratio = 17.886408

Chronic Criteria Concentration=.8/FT/FPH/RATIO = 0.0440124

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Chronic Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0176772
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C) pKa = 9.2448413
Total Chronic Ammonia Criteria=Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Chronic Ammonia Criteria = 0.0440124 / 0.0176772 = Total Ammonia = 2.489786109 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL CHRONIC N-NH3 2.4897861 X .824 2.0515838 MG/L = 2.05

Revised 12/03/97: (i:wdbr1\common\permits\model\newamm)

Analysis of the Schwartz CFH STP effluent data for Ammonia Apr - Oct
Averaging period for standard = 30 days

The statistics for Ammonia are:

Number of values	= 1
Quantification level	= .2
Number < quantification	= 0
Expected value	= 10
Variance	= 36.00001
C.V.	= .6
97th percentile	= 24.33418
Statistics used	= Reasonable potential assumptions - Type 2 data

The WLAs for Ammonia are:

Acute WLA	= 11.9
Chronic WLA	= 2.06
Human Health WLA	= ----

Limits are based on chronic toxicity and 1 samples/month, 1 samples/week

Maximum daily limit	= 4.156401	} 4.2
Average weekly limit	= 4.1564	
Average monthly limit	= 4.1564	

Note: The maximum daily limit applies to industrial dischargers
The average weekly limit applies to POTWs
The average monthly limit applies to both.

The Data are
10

1998 Ammonia

Nov - March. winter tier

1998 Ammonia

FACILITY:
VPDES #:

Ammonia Calculation - Acute Ammonia Criteria for Freshwater

	Temperature	pH	TIER INFORMATION:
DATA ENTRY:->	15	7.50	

FT
FT=10^((.03)(20-T) = 1.4125375

FPH
FPH=1 if 8.0<=pH<=9.0 = NA
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = 1.4354626
FPH= 1.4354626

Acute Criteria Concentration=.52/FT/FPH/2 = 0.1282276

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Acute Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0085855
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C,) pKa = 9.5624909
Total Acute Ammonia Criteria = Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Acute Ammonia Criteria = 0.1282276 / 0.00858547606 = Total Ammonia = 14.9354079 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL ACUTE N-NH3 14.9354079 X .824 12.3067761 MG/L = 12.31

Ammonia Calculation - Chronic Ammonia Criteria for Freshwater

	Temperature	pH	TIER INFORMATION:
DATA ENTRY:->	15	7.50	

FT
FT=10^((.03)(20-T) = 1.4125375

FPH
FPH=1 if 8.0<=pH<=9.0 = NA
FPH=((1+10^(7.4-pH))/1.25 if 6.5<=pH<8.0 = 1.4354626
FPH= 1.4354626

Ratio
Ratio = 13.5 if 7.7<=pH<=9.0 = NA
Ratio = 20.25 x (10^(7.7-pH))/(1+(10^(7.4-pH)) if 6.5<=pH<7.7 = 17.8864081
Ratio = 17.886408

Chronic Criteria Concentration=.8/FT/FPH/RATIO = 0.0220584

Conversion from un-ionized to Total Ammonia can be calculated by using the following formulas:
Total Chronic Ammonia Criteria = Calculated un-ionized ammonia criteria divided by fraction of un-ionized Ammonia
Where: Fraction of un-ionized ammonia = 1/(10^(pKa-pH) +1) Fraction= 0.0085855
where: pKa = 0.09018 + (2729.92/273.2 + temperature 'C) pKa = 9.5624909
Total Chronic Ammonia Criteria=Calculated un-ionized Ammonia Criteria divided by fraction of un-ionized Ammonia
Total Chronic Ammonia Criteria = 0.0220584 / 0.0085855 = Total Ammonia = 2.569274998 mg/l

Total Ammonia is then converted to Ammonia-Nitrogen.
TOTAL CHRONIC N-NH3 2.5692750 X .824 2.1170826 MG/L = 2.12

Revised 12/03/97: (i:wdbr1\common\permits\model\newamm)

Analysis of the Schwartz [illegible]H STP effluent data for Ammonia Nov - Mar
Averaging period for standard = 30 days

The statistics for Ammonia are:

Number of values	=	1
Quantification level	=	.2
Number < quantification	=	0
Expected value	=	10
Variance	=	36.00001
C.V.	=	.6
97th percentile	=	24.33418
Statistics used	=	Reasonable potential assumptions - Type 2 data

The WLAs for Ammonia are:

Acute WLA	=	12.3
Chronic WLA	=	2.13
Human Health WLA	=	----

Limits are based on chronic toxicity and 1 samples/month, 1 samples/week

Maximum daily limit	=	4.297638	4.3
Average weekly limit	=	4.297637	
Average monthly limit	=	4.297637	

Note: The maximum daily limit applies to industrial dischargers
The average weekly limit applies to POTWs
The average monthly limit applies to both.

The Data are
10

1998 Ammonia

2013 Ammonia

1/17/2013 1:31:36 PM

Facility = Schwartz (April - October)
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 3.92
WLAc = 3.11
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 3.92
Average Weekly limit = 3.92
Average Monthly Limit = 3.92

The data are:

9

2013 Ammonia

1/17/2013 1:32:58 PM

Facility = Schwartz (November - March)
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 46.8
WLAc = 6.36
Q.L. = .2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 12.8323817941277
Average Weekly limit = 12.8323817941277
Average Monthly LImit = 12.8323817941277

The data are:

9

VaFWIS - Department of Game and Inland Fisheries

38,21,15.0 -77,17,18.0 is the Search Point

Submit Cancel

Search Point
- ◎ **Change** to "clicked" map point
- ○ **Fixed** at 38,21,15.0 - 77,17,18.0

Show Position Rings
◎ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◎ Yes ○ No
2 Search distance miles radius

Search Point is at map center

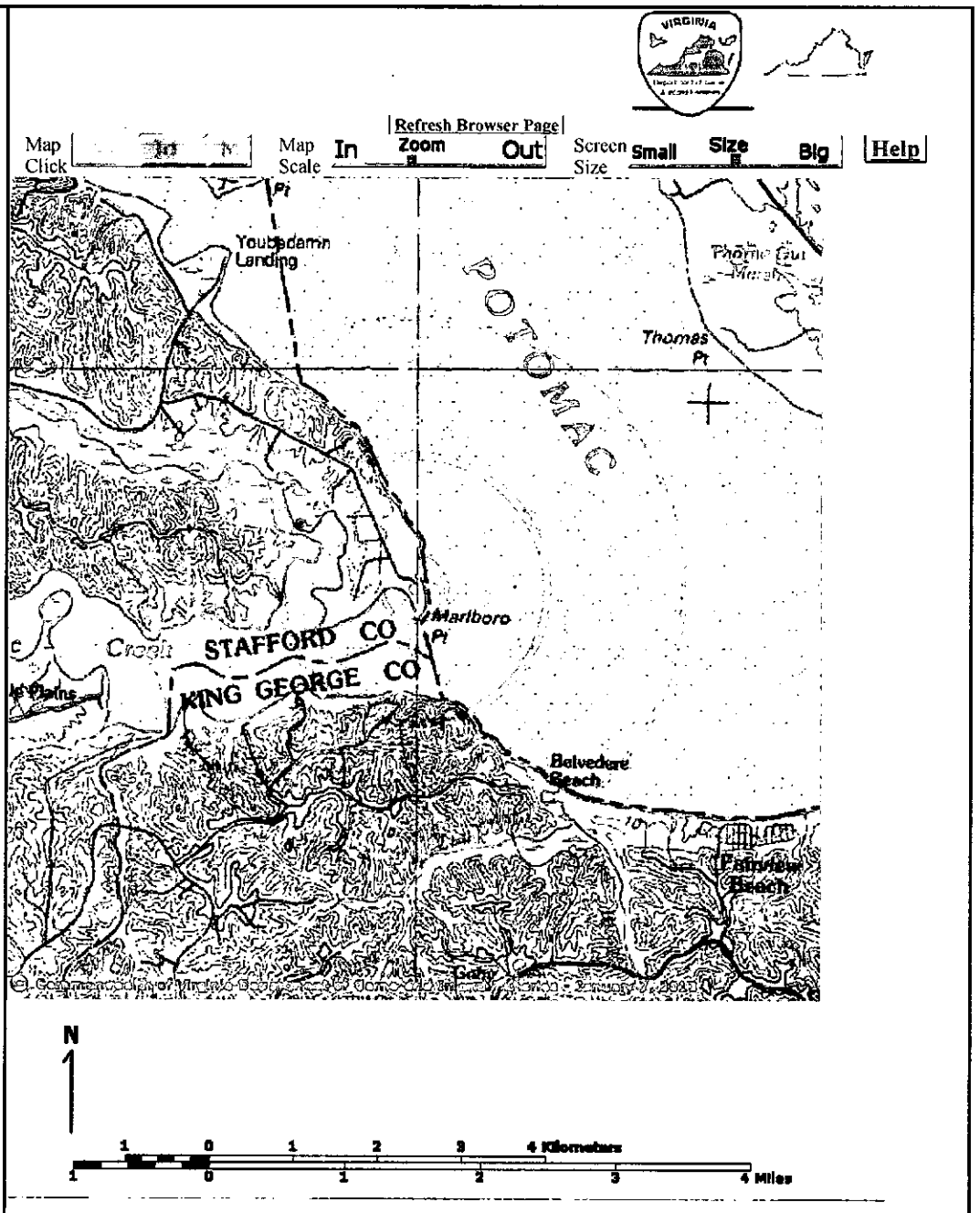
Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search

Map Overlay Legend

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area



Point of Search 38,21,15.0 -77,17,18.0
Map Location 38,21,15.0 -77,17,18.0

Select **Coordinate System:**
- ◎ Degrees,Minutes,Seconds Latitude - Longitude
- ○ Decimal Degrees Latitude - Longitude
- ○ Meters UTM NAD83 East North Zone
- ○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 295250 and top 4252390. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

Attachment 8

	are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network. Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries. map assembled 2013-01-07 16:29:52 (qa/qc December 5, 2012 8:04 - tn=441662 dist=3218 I) $poi=38.3541666 -77.2883333

VaFWIS Initial Project Assessment Report Compiled on 1/7/2013, 4:31:26 PM

Help

Known or likely to occur within a **2 mile radius around point 38,21,15.0 -77,17,18.0**
in **099 King George County, 179 Stafford County, VA**

View Map of Site Location

461 Known or Likely Species ordered by Status Concern for Conservation (displaying first 21) (21 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010031	FESE	I	Sturgeon, shortnose	Acipenser brevirostrum		Habitat
010032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
060003	FESE	II	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
040110	SE	I	Rail, black	Laterallus jamaicensis		Habitat
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii		Habitat
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FS	I	Fritillary, regal	Speyeria idalia idalia		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Yes	BOVA,BECAR,Habitat,BAEANests
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA
010077		I	Shiner, bridle	Notropis bifrenatus		BOVA
040372		I	Crossbill, red	Loxia curvirostra		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040038		II	Bittern, American	Botaurus lentiginosus		Habitat

040052		II	Duck, American black	Anas rubripes		BOVA
040105		II	Rail, king	Rallus elegans		BOVA,Habitat
040187		II	Tern, royal	Sterna maxima maximus		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view **All 461 species** View 461

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams (3 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
C1	Accokeek creek	Confirmed	1			Yes
C63	Potomac creek	Confirmed	5		IV	Yes
C64	Potomac river	Confirmed	6		IV	Yes

Impediments to Fish Passage

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

are present. View Map of Bald Eagle Concentration Areas and Roosts

(6 records)

BECAR ID	Observation Year	Authority	Type	Comments	View Map
53	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use High	Yes
54	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Low	Yes
55	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Moderate	Yes
56	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use High	Yes
57	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Low	Yes
58	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Moderate	Yes

Bald Eagle Nests (27 records , 27 Observations with Threatened or Endangered species)

View Map of All Query Results Bald Eagle Nests

Nest	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE *	Highest Tier **	
SS9701	1	May 18 2011	1	FS	II	Yes
KG0508	1	Apr 24 2011	1	FS	II	Yes
KG0704	1	Apr 24 2011	1	FS	II	Yes
ST0001	1	Apr 24 2011	1	FS	II	Yes
SK0601	1	Apr 18 2011	1	FS	II	Yes
SK0901	1	Apr 18 2011	1	FS	II	Yes
RI1010	1	Mar 14 2011	1	FS	II	Yes
RI1102	1	Mar 14 2011	1	FS	II	Yes
RI9801	1	Mar 14 2011	1	FS	II	Yes

RI9805	1	Mar 14 2011	1	FS	II	Yes
KG0404	1	Mar 13 2011	1	FS	II	Yes
JC1104	1	Mar 3 2011	1	FS	II	Yes
KG0703	8	May 16 2010	1	FS	II	Yes
KG0806	6	May 16 2010	1	FS	II	Yes
ST0503	12	May 16 2010	1	FS	II	Yes
ST0601	11	May 16 2010	1	FS	II	Yes
ST1004	2	May 16 2010	1	FS	II	Yes
ST9603	24	May 16 2010	1	FS	II	Yes
KG0402	5	Apr 29 2006	1	FS	II	Yes
ST0403	3	Jan 1 2005	1	FS	II	Yes
KG9804	8	Jan 1 2003	1	FS	II	Yes
KG8901	13	Apr 27 2000	1	FS	II	Yes
KG9304	15	Apr 27 2000	1	FS	II	Yes
ST8501	19	Apr 27 2000	1	FS	II	Yes
ST8202	2	Jan 1 1983	1	FS	II	Yes
KG8004	3	May 28 1982	1	FS	II	Yes
ST7501	4	May 19 1980	1	FS	II	Yes

Displayed 27 Bald Eagle Nests

Habitat Predicted for Aquatic WAP Tier I & II Species (1 Reach)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
(20700112)	FESE	010031	FESE	I	Sturgeon, shortnose	Acipenser brevirostrum	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species (5 Species)

View Map of Combined Terrestrial Habitat Predicted for 5 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040110	SE	I	Rail, black	Laterallus jamaicensis	Yes
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii	Yes
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Yes
040038		II	Bittern, American	Botaurus lentiginosus	Yes

040105		II	Rail, king	Rallus elegans	Yes

Public Holdings:

N/A

Compiled on 1/7/2013, 4:31:27 PM I441662.0 report=IPA searchType= R dist= 3218 poi= 38,21,15.0 -77,17,18.0

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Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Stafford County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2013 to XXX, 2013

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Richard Schwartz, 880 S. Pickett Street, Alexandria, VA 22304, VA0073121

NAME AND ADDRESS OF FACILITY: Schwartz Sewage Treatment Plant, 696 Marlborough Point Road, Stafford, VA 22554

PROJECT DESCRIPTION: Richard Schwartz has applied for a reissuance of a permit for the private Schwartz STP. The applicant proposes to release treated sewage wastewaters from a residential home a rate of 0.0006 million gallons per day into a water body. The sludge will be disposed of by transporting it to Aquia AWT (VA0060968) for further treatment and final disposal. The facility proposes to release treated wastewaters in the Potomac Creek in Stafford County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, $cBOD_5$, Total Phosphorus, Ammonia as N, Dissolved Oxygen, and *Enterococci*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Joan C. Crowther
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821

Attachment 9

Revised 2/2003

State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Schwartz Sewage Treatment Plant
NPDES Permit Number:	VA0073121
Permit Writer Name:	Joan C. Crowther
Date:	January 9, 2013. .. Updated 2/20/13

Major [ ] **Minor** [x] **Industrial** [ ] **Municipal** [x]

I.A. Draft Permit Package Submittal Includes:	**Yes**	**No**	**N/A**
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?		X	
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	**Yes**	**No**	**N/A**
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?	X		
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet **or** permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?		X	

Attachment 10

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs
(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD_5 and TSS for a 30-day average and 45 mg/l BOD_5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?		X	
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?			X
4. Does the permit require testing for Whole Effluent Toxicity?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

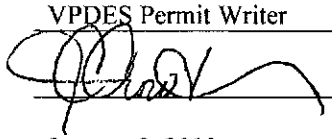
List of Standard Conditions – 40 CFR 122.41

Duty to comply	Property rights	Reporting Requirements
Duty to reapply	Duty to provide information	Planned change
Need to halt or reduce activity not a defense	Inspections and entry	Anticipated noncompliance
	Monitoring and records	Transfers
Duty to mitigate	Signatory requirement	Monitoring reports
Proper O & M	Bypass	Compliance schedules
Permit actions	Upset	24-Hour reporting
		Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		X	

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Joan C. Crowther
Title	VPDES Permit Writer
Signature	
Date	January 9, 2013